

**TITLE:** MORPHOLOGICAL AND MOLECULAR IDENTIFICATION OF CYANOBACTERIA GENERA IN WATERBODIES FROM PARQUE NACIONAL DA CHAPADA DAS MESAS - MARANHÃO

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**ABSTRACT:**

Cyanobacteria are one of the major phyla of the bacterial domain with a wide distribution around the globe, colonizing freshwater, marine and terrestrial ecosystems. They are primary producers of a rich source of bioactive secondary compounds, among which are toxic compounds (cyanotoxins). This study aimed to investigate the taxonomic diversity, at the morphological level, of the cyanobacteria present in the water bodies of the Parque Nacional da Chapada das Mesas (PNCM). A total of 6 samples of 30mL of water were collected in the Complexo da Pedra Caída and in associated environments. For analysis of the water pH and turbidity parameters, 1.5 liters of raw water were collected, besides the measurements made *in situ*. Cyanobacteria cultures were obtained according to the protocol of Ferris & Hirsch (1991) by inoculating the samples in BG-11 medium, as well as incubating them in illumination for 3 to 4 weeks until a significant increase of the bacterial biomass concentration. After this period aseptically slides were prepared for each culture for microscopic observation. For the morphological identification, the dichotomous key of Bicudo & Menezes (2006) was used. At the collection points of the samples, pH and turbidity averages of 7.2 and 5.2, respectively. The growth of cyanobacteria colonies were observed for 5 different genera: *Choroococcus*, genus that produces microcystins, a common form of cyanotoxins considered as tumor promoters; *Synechocystis*, includes 20 species of which only one was identified in Brazil; *Pseudanabaena*, has more than 30 species, however, is a genus with scarce information; *Borzia*, found mainly in the plankton of lakes and ponds, comprises 7 species; *Geilteerinema*, a genus that occurs mainly in subaerial environments and has more than 30 species. These observations demonstrate the need and relevance of studies with the molecular biology approach in order to confirm the presence of toxin producing cyanobacteria, highlighting the risks to the community, as well as to characterize the biotechnological potential that these microorganisms offer.

**Keywords:** diversity, phytoplankton, cyanobacteria, Pedra Caída

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